



Canyon Fuel
Company, LLC.
Sufco Mine

A Subsidiary of Arch Western Bituminous Group, LLC.

Ken May, General Manager
597 South SR 24
Salina, UT 84654
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Incoming
60410002
4245
K

January 7, 2013

Permit Supervisor
Utah Coal Regulatory Program
Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
P. O. Box 145801
Salt Lake City, Utah 84114-5801

Re: 20-Acre Federal Lease SL-062583 Expansion, Canyon Fuel Company, LLC, Sufco Mine,
Permit Number C/041/0002

Dear Permit Supervisor:

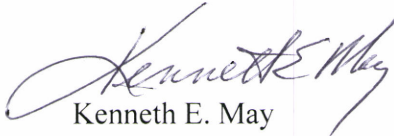
For your review we have included three copies of an amendment to incorporate 20 additional acres into Federal Lease SL-062583. A portion of the acreage will be used to develop underground entries. The area will not be longwall mined; only used as entries. No subsidence is anticipated and there will be no surface disturbance in the expansion area.

The BLM lease application for the 20-acre modification has been through the public comment period with no comment having been received. We are awaiting the paper copy of the lease modification, which will be incorporated into Appendix 1-1 once it is received.

We appreciate your taking the time to review this amendment in concurrence with the issuance of the lease modification documents.

If you have any questions regarding the information contained in this letter or within the permit modification, please call Vicky Miller at (435) 286-4481.

Sincerely,
CANYON FUEL COMPANY, LLC
SUFCO Mine


Kenneth E. May
General Manager

Encl.
cc: DOGM Correspondence File

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File in:

☐ Confidential
☒ Shelf
☐ Expandable

Date Folder *01082013* *C/041/0002*

Incoming 0002
See Confidential
0001

APPLICATION FOR COAL PERMIT PROCESSING

Permit Change ☒ New Permit ☐ Renewal ☐ Exploration ☐ Bond Release ☐ Transfer ☐

Permittee: CANYON FUEL COMPANY, LLC

Mine: SUFCO MINE

Permit Number: C/041/002

Title: 20-Acre Federal Lease SL-062583 Expansion

Description, Include reason for application and timing required to implement:

Instructions: If you answer yes to any of the first eight (gray) questions, this application may require Public Notice publication.

- ☒ Yes ☐ No 1. Change in the size of the Permit Area? Acres: 20 Disturbed Area: 0.0 ☒ increase ☐ decrease.
- ☐ Yes ☒ No 2. Is the application submitted as a result of a Division Order? DO# _____
- ☐ Yes ☒ No 3. Does the application include operations outside a previously identified Cumulative Hydrologic Impact Area?
- ☐ Yes ☒ No 4. Does the application include operations in hydrologic basins other than as currently approved?
- ☐ Yes ☒ No 5. Does the application result from cancellation, reduction or increase of insurance or reclamation bond?
- ☐ Yes ☒ No 6. Does the application require or include public notice publication?
- ☒ Yes ☐ No 7. Does the application require or include ownership, control, right-of-entry, or compliance information?
- ☐ Yes ☒ No 8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
- ☐ Yes ☒ No 9. Is the application submitted as a result of a Violation? NOV # _____
- ☐ Yes ☒ No 10. Is the application submitted as a result of other laws or regulations or policies?
Explain: _____
- ☐ Yes ☒ No 11. Does the application affect the surface landowner or change the post mining land use?
- ☒ Yes ☐ No 12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2)
- ☒ Yes ☐ No 13. Does the application require or include collection and reporting of any baseline information?
- ☐ Yes ☒ No 14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
- ☐ Yes ☒ No 15. Does the application require or include soil removal, storage or placement?
- ☐ Yes ☒ No 16. Does the application require or include vegetation monitoring, removal or revegetation activities?
- ☐ Yes ☒ No 17. Does the application require or include construction, modification, or removal of surface facilities?
- ☐ Yes ☒ No 18. Does the application require or include water monitoring, sediment or drainage control measures?
- ☒ Yes ☐ No 19. Does the application require or include certified designs, maps or calculation?
- ☐ Yes ☒ No 20. Does the application require or include subsidence control or monitoring?
- ☐ Yes ☒ No 21. Have reclamation costs for bonding been provided?
- ☐ Yes ☒ No 22. Does the application involve a perennial stream, a stream buffer zone or discharges to a stream?
- ☒ Yes ☐ No 23. Does the application affect permits issued by other agencies or permits issued to other entities?

Please attach four (4) review copies of the application. If the mine is on or adjacent to Forest Service land please submit five (5) copies, thank you. (These numbers include a copy for the Price Field Office)

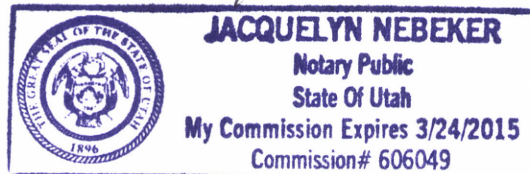
I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

KENNETH E. MAY, MINE MANAGER
Print Name

Sign Name, Position, Date

Subscribed and sworn to before me this 7 day of January, 20 13

Notary Public
My commission Expires: _____, 20____ }
Attest: State of _____ } ss:
County of _____



For Office Use Only:

Assigned Tracking
Number:

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APPLICATION FOR COAL PERMIT PROCESSING

Detailed Schedule Of Changes to the Mining And Reclamation Plan

Permittee: CANYON FUEL COMPANY, LLC

Line: SUFCO MINE

Permit Number: C/041/002

Title: 20-Acre Federal Lease SL-062583 Expansion

Provide a detailed listing of all changes to the Mining and Reclamation Plan, which is required as a result of this proposed permit application. Individually list all maps and drawings that are added, replaced, or removed from the plan. Include changes to the table of contents, section of the plan, or other information as needed to specifically locate, identify and revise the existing Mining and Reclamation Plan. Include page, section and drawing number as part of the description.

DESCRIPTION OF MAP, TEXT, OR MATERIAL TO BE CHANGED

<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Replace pages 1-7 thru 1-12 in Chapter 1 in Volume 1 of MRP.
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	Appendix 1-1, Lease SL-062583 Modification Document (When Available)
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Replace pages 2-ii, 2-1 thru 2-3 in Chapter 2 in Volume 1 of MRP.
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Replace pages 3-iv, 3-14 and 3-14A in Chapter 3 in Volume 1 of MRP.
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	Appendix 3-13 Add report to back of the existing information.
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Replace pages 4-12 and 4-12A in Chapter 4 in Volume 1 of MRP.
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Replace page 5-39G in Chapter 5 in Volume 1 of the MRP.
<input type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Plates 3-1 and 3-2 in Volume 1 of MRP.
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Plate 4-1A in Chapter 4, Volume 1 of MRP.
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Plates 5-1, 5-2A, 5-2B, 5-2C, 5-5, 5-6, 5-7, 5-10A and 5-11 in Chapter 5, Volume 1 of MRP.
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Plate 6-1 in Chapter 6, Volume 2 of MRP.
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Plates 7-2A and 7-3 in Chapter 7, Volume 2 of MRP.
<input type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	
<input type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	
<input type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	CONFIDENTIAL INFORMATION
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Plate 3-3 in Confidential Folder of MRP.
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Plates 5-10AC in Confidential Folder of MRP.
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	Cultural Resource Inventory at the back of Appendix 4-2 in Confidential Folder of MRP.
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Any other specific or special instruction required for insertion of this proposal into the Mining and Reclamation Plan.

1/8/2013 Due to a delay the lease document will not be available for inclusion into the M&RP until the week of January 16th. The document will be submitted for inclusion into the permit once it is received.

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CHAPTER 1
GENERAL CONTENTS

Mine ID No. 42-00089, Waste Rock ID No. 1211-UT-09-00089-01.

112.800 Interest in Contiguous Lands

The applicant owns or controls, directly or indirectly, no legal or equitable interest in any lands contiguous to the permit area.

112.900 Certification of Submitted Information

Canyon Fuel Company, LLC hereby attests that the information contained in this permit document is true and correct to the best of their knowledge.

113 Violation Information

For violation information refer to Table 1-2 in the General Chapter 1 binder for Canyon Fuel Company, LLC prepared for the Dugout Canyon Mine, Soldier Canyon Mine, SUFCO Mine, Skyline Mines and Banning Loadout operations.

114 Right-of-Entry Information

Copies of documents granting the legal right to enter and begin underground coal mining activities have not changed with the acquisition. They can be found in Appendix 1.1 Mining and Reclamation Plan for the SUFCO Mine, which is unmodified by this Notice of Change in Ownership and Control Information.

The right to enter the leaseholds conveyed by the Federal Coal Leases is conferred to the lessee by the Mineral Leasing Act of 1920 and the leases themselves. Copies of Federal Coal Leases U-47080, U-28297, U-62453, U-149084, U-63214, UTU-76195, SL-062583 and State of Utah Coal Lease ML 49443-OBA which grant the right to enter and conduct underground mining operations

on the leased premises are presented in Appendix 1-2 Mining and Reclamation Plan for the SUFCO Mine. Appendix 1-2 is unmodified by this Notice of Change in Ownership and Control Information.

Federal Coal Lease SL-062583 grants the right to use lands for the construction and utilization of surface facilities necessary for underground coal mining.

The legal description of the SUFCO coal leases:

Federal Coal Lease U-28297 - (716.51 acres) - Approved January 1979
Modified January 2012

T. 21 S., R. 5 E., SLM, Utah
Sec. 32, Lot 1, N1/2S1/2
Sec. 33, NW1/4SW1/4
T. 22 S., R. 5 E., SLM, Utah
Sec. 5, W1/2W1/2;
Sec. 7, S1/2NE1/4, E1/2SW1/4, W1/2SE1/4;
Sec. 8, W1/2NW1/4

Federal Coal Lease U-062453 - (480 acres) - Approved March 1962

T. 21 S., R. 5 E., SLM, Utah
Sec. 28, SW1/4SW1/4
Sec. 29, SE1/4SE1/4
Sec. 32, N1/2
Sec. 33, W1/2NW1/4

Federal Coal Lease U-0149084 - (240 acres) - Approved June 1966

T. 22 S., R. 4 E., SLM, Utah
Sec. 12, NE1/4 and N1/2SE1/4

Federal Coal Lease SL-062583 - (3,079.83 acres) - Approved September 1941

Modified January 1973
Modified December 2009, January 2013

T. 21 S., R. 4 E., SLM, Utah
Sec. 36, S1/2
T. 21 S., R. 5 E., SLM, Utah
Sec. 31, all;
T. 22 S., R. 4 E., SLM, Utah
Sec. 1, lots 1 to 4 incl. S1/2N1/2, S1/2
Sec. 2, SE1/4, S1/2SW1/4;
Sec. 3, SE1/4SE1/4;
Sec. 10, E1/2NE1/4, NE1/4SE1/4;
Sec. 11, N1/2, N1/2S1/2;
Sec. 12, NW1/4, W1/2NW1/4SW1/4;
T. 22 S., R. 5 E., SLM, Utah

Sec. 6, all;
Sec. 7, N1/2NE1/4, E1/2NW1/4
Federal Coal Lease U-47080 - (1,953.73 acres) - Approved October 1981
Modified December 2009

T. 21 S., R. 4 E., SLM, Utah
Sec. 25, all;
Sec. 35, E1/2, E1/2SW1/4;
Sec. 36, N1/2.
T. 21 S., R. 5 E., SLM, Utah
Sec. 30, lots 2-4, W1/2SE1/4
T. 22 S., R. 4 E., SLM, Utah
Sec. 2, lots 1-4, S1/2NE1/4, S1/2NW1/4, N1/2SW1/4;
Sec. 3, NE1/4SE1/4.

Federal Coal Lease U-63214 - (8,826.34 acres) - Approved July 1989
Modified June 1999
Modified December 2009
Modified May 2011

Tract 1:

T. 21 S., R. 4 E., SLM, Utah
Sec. 12, E1/2SE1/4
Sec. 13, E1/2NE1/4, S1/2
Sec. 14, E1/2SW1/4, SE1/4
Sec. 23, E1/2, E1/2W1/2
Sec. 24, all.
T. 21 S., R. 5 E., SLM, Utah
Sec. 15, W1/2
Secs. 16-21, all;
Sec. 22, W1/2
Sec. 26, W1/2NW1/4SW1/4, SW1/4SW1/4
Sec. 27, all;
Sec. 28, N1/2, N1/2SW1/4, SE1/4SW1/4, SE1/4
Sec. 29, E1/2NE1/4, NE1/4SE1/4
Sec. 30, lot 1, N1/2NE1/4
Sec. 33, NE1/4, E1/2NW1/4, NE1/4SW1/4, N1/2SE1/4
Sec. 34, NW1/4NE1/4, NW1/4, NW1/4SW1/4.

Tract 2:

T. 21 S., R. 5 E., SLM, Utah
Sec. 10, SE1/4NW1/4, E1/2SW1/4, E1/2E1/2SW1/4SW1/4,
E1/2E1/2NW1/4SW1/4, E1/2E1/2SW1/4NW1/4.

Tract 3:

T. 21 S., R. 4 E., SLM, Utah
Sec. 26, E1/2, E1/2SW1/4;
Sec. 35, NW1/4, W1/2SW1/4.

Federal Coal Lease UTU-76195 - (5,694.66 acres) - Approved October 1999

Modified December 2006

- T. 21 S., R. 5 E., SLM
Sec. 2, lots 3,4, S1/2SW1/4, SW1/4SE1/4
Sec. 10, E1/2
Sec. 11, all
Sec. 12, S1/2SW1/4, NW1/4SW1/4
Sec. 13, NW1/4, S1/2
Sec. 14, all
Sec. 15, E1/2
Sec. 22, E1/2
Sec. 23-24, all
Sec. 25, N1/2, N1/2S1/2
Sec. 26, N1/2, NE1/4SW1/4, E1/2NW1/4SW1/4, SE1/4
T. 21 S., R. 6 E., SLM
Sec. 19, lots 3-4, E1/2SW1/4
Sec. 30, lots 1-3, E1/2NW1/4, NE1/4SW1/4

State of Utah Coal Lease ML 49443-OBA - (2,134.19 acres) - Approved October 2004

- T. 21 S., R. 5 E., SLB&M
Sec. 4: Lots 1, 2, 3, 4, S1/2S1/2
Sec. 5: Lots 1, 2, 3, 4, S1/2S1/2
Sec. 7: Lots 2, 3, 4, S1/2NE1/4, SE1/4
Sec. 8: All
Sec. 9: All

Canyon Fuel Company, LLC acquired the right to entry on these properties in the merger described in Section 111 hereinabove.

In addition, the SUFCO Mine permit area includes certain fee lands owned by Canyon Fuel Company, LLC as follows:

- T. 21 S., R. 5 E., SLB&M, Utah
Sec. 29, SW1/4, NW1/4, W1/2NE1/4, W1/2SE1/4
Sec. 30, S1/2NE1/4, E1/2SE1/4
containing 640.00 acres
T. 22 S., R. 4 E., SLB&M, Utah
Sec. 18, NW1/4NE1/4
containing 40 acres

The name of the owner of these fee lands changed from Coastal States Energy Company to Canyon Fuel Company, LLC as a result of the merger transaction described in Section 111 hereinabove.

The SUFCO Mine also uses certain Forest Service lands in its operation for a spring collection system, pumphouse, water transmission line, sanitary discharge line, sanitary drainfield, access

road to the sediment pond, and 25 KV powerline. These USFS special use permit areas are shown on Plate 5-6 through portions of:

T. 22 S., R. 4 E., SLB&M, Utah
Sec. 12, S1/2
containing 15.32 acres

The name of the permittee changed from Southern Utah Fuel Company to Canyon Fuel Company, LLC pursuant to the merger described in Section 111 herein above.

The total lease area includes ~~20,991.07~~ 21,011.07 acres of Federal coal leases, 2,134.19 acres of State of Utah coal leases, 640 acres of fee coal leases, the 40 acres waste rock disposal site and 15.32 acres under U.S. Forest Service special use permit for a total of 23,840.58 ~~23,820.58~~ acres.

115 Status of Unsuitability Claims

To the best knowledge of Canyon Fuel Company, LLC, no portion of the area to be permitted is designated, or under study for being designated, unsuitable for mining.

Since the SUFCO Mine was in production before passage of the Surface Mining Control and Reclamation Act of 1977, the unsuitability criteria were not applied to the existing surface facilities.

Canyon Fuel Company, LLC does not propose to conduct coal mining or reclamation operations within 300 feet of any occupied dwelling. Coal mining and reclamation operations have been or will be conducted within 100 feet of a public road, see Section 5.2.1.1 for details. Forest Service approval to conduct coal mining and reclamation operations within 100 feet of the Link Canyon forest service road is located in Appendix 1-1 and the newspaper advertisement for public comment is located in Appendix 1-3.

116 Permit Term

The following information is presented to identify permit term requirements and stipulations. Canyon Fuel Company will be operating the SUFCO Mine with continuous miner and longwall mining methods. Although the Mining and Reclamation Permit Application covers the next five-year period of mining, information is presented below for the life of the mining operation.

- | | | |
|----|------------------------------------|--|
| 1. | First coal produced | 1941 |
| 2. | Termination of mining activity | August, 2025 |
| 3. | Horizontal extent of mine workings | 23,820.58 23,840.58 acres
(Life of mine) |
| 4. | Vertical extent of mine workings | Surface to 2,000 feet deep
(Life of mine) |

The anticipated total acreage to be affected during the five years of operation by underground mining activities is 1,500 acres. The estimated number of total surface acres to be affected over the entire mining operation is 48.432 acres.

<u>PERMITTED DISTURBED AREA BOUNDARY</u>	<u>ACTUAL AREA CURRENTLY DISTURBED TO BE RECLAIMED</u>	<u>SITE DESCRIPTION</u>
30.210	17.405	Mine Site, East Spring Canyon
0.967	0.39	Spring Collection Field, Convulsion Canyon
0.220	0.075	Pump House, Convulsion Canyon
0.784	0.40	Leach Field, Convulsion Canyon
1.595	0.193	Water Tank, East Spring Canyon
0.286	0.017	3 East Portals
1.774	0.70	4 East Portals
0.302	0.017	South Portals
0.396	0.017	Quitchupah Portals
0.287	0.18	Link Canyon Substation No. 1
0.245	0.12	Link Canyon Substation No. 2
0.380	0.18	Link Canyon Portal
10.986	8.733	Waste Rock Disposal Site
0.000	0.00	North Water Mitigation Area
0.000	0.00	Quitchupah Fan and Shaft Site
48.432	28.427	Totals

APPENDIX 1-1

Legal Right-of-Entry Documents

CHAPTER 2

SOILS

TABLE OF CONTENTS

Section	Page
2.10 Introduction	2-1
2.20 Environmental Description	2-1
2.2.1 Prime Farmland Investigation	2-1
2.2.2 Soil Survey	2-2
2.2.2.1 Soils Map	2-3
2.2.2.2 Soil Identification	2-3
2.2.2.3 Soil Description	2-4
2.2.2.4 Soil Productivity	2-9
2.2.3 Prime Farmland Soil Characterization	2-9
2.2.4 Substitute Topsoil	2-10
2.30 Operation Plan	2-11
2.3.1 General Requirements	2-11
2.3.1.1 Removing and Storing Soil Methods	2-11
2.3.1.2 Suitability of Topsoil Substitutes/Supplements	2-18
2.3.1.3 Testing of Topsoil Handling and Reclamation Procedures Regarding Revegetation	2-18
2.3.1.4 Construction, Modification, Use, and Maintenance of Topsoil Storage Piles	2-19
2.3.2 Topsoil and Subsoil Removal	2-21
2.3.2.1 Topsoil Removal and Segregation	2-21
2.3.2.2 Poor Topsoil	2-21
2.3.2.3 Thin Topsoil	2-21
2.3.2.4 Minor Disturbances Not Requiring Topsoil Removal	2-21
2.3.2.5 Subsoil Segregation	2-22
2.3.2.6 Timing	2-22
2.3.2.7 Topsoil and Subsoil Removal Under Adverse Conditions	2-22
2.3.3 Topsoil Substitutes and Supplements	2-23
2.3.3.1 Overburden Materials Supplementing and/or Replacing Topsoil	2-23
2.3.3.2 Suitability of Topsoil Substitutes and Supplements	2-23
2.3.3.3 Physical and Chemical Analyses	2-23
2.3.3.4 Testing of Substitute Topsoil	2-24
2.3.4 Topsoil Storage	2-24
2.3.4.1 Topsoil Stockpiling	2-24
2.3.4.2 Stockpiled Topsoil	2-24
2.3.4.3 Topsoil Stockpile Relocation	2-25
2.40 Reclamation Plan	2-26
2.4.1 General Requirements	2-26
2.4.2 Soil Redistribution	2-26
2.4.2.1 Soil Redistribution Practices	2-26
2.4.2.2 Regrading	2-27

CHAPTER 2

SOILS

2.10 Introduction

This chapter and Volume 3 of this M&RP contains all pertinent information relating to identification, management, and reclamation activities associated with the soil resources present in the disturbed area of the SUFCO Mine.

2.20 Environmental Description

The SUFCO Mine area lies in central Utah at the southern end of the Wasatch Plateau. Topography is dominated by plateaus separated by deeply incised canyons. Canyon walls are generally composed of laterally continuous (several thousand feet) ledge-forming sandstones, interbedded with slope forming shales and siltstones. Topography in the SUFCO Mine area ranges from 6500 to about 9,000 feet above sea level. Soils are generally not cultivated due to their thin nature, shortage of irrigation water, and a short growing season. Residual and colluvial soils are present at the SUFCO Mine surface facilities area. These soils have formed from residual sandstone and shale particles that mixed as they migrated down slope. Soils are usually very shallow, consisting predominantly of sand and silty sand loams which have high percolation rates. The soils are highly susceptible to wind erosion. The inherent erosion hazard from water is low. Rock outcrops consist of alternating layers of sandstone and shale. Subordinate amounts of coal and limestone are also present. The landscape is steep and rocky with massive sandstone ledges, and siltstone/shale slopes. Surface and subsurface layers are often rocky.

2.2.1 Prime Farmland Investigation

No prime farmland exists in the SUFCO Mine disturbed area, Link Canyon disturbed area, or in any of its lease areas. Mining activities will not impact prime farmland. In compliance with R645-302-313, a pre-application investigation was conducted by the Applicant to determine if any prime farmland would be impacted by the project. Based on the federal criteria for determining the presence or absence of prime farmland, the Convulsion Canyon area, Link Canyon, the Pines Tract area, and the SITLA Muddy Tract area cannot be classified as prime farmland. Consultation with

Dr. Theron B. Hutchings, State Soil Scientist for the Soil Conservation Service, substantiated the absence of prime farmland in the Convulsion Canyon and Link Canyon areas. (Appendix 2-1).

2.2.2 Soil Survey

A Level I soil survey of the entire SUFCO Mine disturbed area, including the Link Canyon Substations No. 1 and 2, has been conducted. Soil survey data are presented in Appendix 2-2 for the majority of the permit area, Appendix 2-6 for the Link Canyon Substation areas, and are herein summarized in Sections 2.2.2.1 through 2.2.2.3. Survey data includes the following information: taxonomic classification, horizon name and depth, dry and moist color, texture (percent sand, silt, and clay), class, structure, percent rock fragments and organic matter, pH, effervescence, EC, and solubility of calcium, magnesium, and sodium (Appendices 2-2, and 2-6). A cross-reference list of map unit, soil taxonomic classification, and sample site appears in pages 17 through 19 of Appendix 2-2.

A site specific soil survey will be completed for the Overflow Pond prior to disturbance and this information will be utilized in determining topsoil salvage depth. The results of this soil survey will be included in the as-built addendum to be included in Appendix 2-2.

An Order 2 soil survey has been completed for the Link Canyon Substation No. 1 disturbed area and is included in Appendix 2-2. Additionally, an Order 1 soil survey was conducted of the substation Nos. 1 and 2 pad areas and the results are included in Appendix 2-6.

An Order 3 soil survey has been conducted for the Pines Tract and the results are included in Appendix 2-8. (Plate 2-2)

An Order 3 soil survey has been conducted for the SITLA Muddy Tract and the results are included in Appendix 2-10. (Plate 2-3)

Due to the lack of potential for subsidence (development of main entries) a soil survey of the 20-acre expansion of Federal Lease SL-062583 was not completed. However, a soil survey was completed of the adjacent area which would likely contains similar soils (Appendix 2.2, Welch 1980).

2.2.2.1 Soils Map

Plates 2-1 and 2-2 delineates the soil types present in the disturbed and adjacent areas.

2.2.2.2 Soil Identification

Soils present in the narrow V-shaped East Spring Canyon, which lie within and immediately adjacent to the disturbed area of the SUFCO Mine have been identified, characterized, and their spatial occurrences documented (Appendix 2-2). Four soil types are present in the disturbed area, and are herein referred to as soil types O, W, T, and X (Plate 2-1). Soil type O is a loamy-skeletal, mixed, frigid Ustic Torriorthent. Soil W is a loamy-skeletal, mixed, frigid Typic Xerothent. Soil type T is a loamy-skeletal, mixed, frigid, Calcixerollic Xerochrept. Soil X is a complex composed of both a clayey-skeletal, mixed, frigid, shallow Lithic Calcixeroll, and a fine, mixed, frigid Mollic Haploxeralf.

CHAPTER 3

BIOLOGY

LIST OF PLATES

Plate

- 3-1 Plant Communities and Reference Areas
- 3-2 Elk Range
- 3-3 Deer Range & Raptor Nests

LIST OF APPENDICES

(Appendices appear in Volume 5)

Appendix

- 3-1 Report of 1983 Field Investigations
- 3-2 Aquatic Resource Inventory of Southern Utah Fuel Company Permit Area
- 3-3 Wildlife Assessment of the Southern Utah Fuel Company Mining Property and Adjacent Areas
- 3-4 Raptor and General Avifauna Studies
- 3-5 Fauna of Southeastern Utah and Life Requisites Regarding their Ecosystems
- 3-6 Vegetation Information Guidelines, Appendix A
- 3-7 Power Line Correspondence
- 3-8 Bat Survey for the SUFCO Mine
- 3-9 Vegetation and Wildlife of the Pines Tract Project.
- 3-10 Monitoring and Mitigation Plan for Mining Under the East Fork of Box Canyon
- 3-11 Muddy Creek Technical Report-Wildlife
- 3-12 Mexican Spotted Owl Survey Muddy Tract
- 3-13 Vegetation and Wildlife of the West Coal Lease Modifications and Vegetation and Wildlife of the West Coal Lease Modifications
- 3-14 Monitoring and Mitigation Plan for Undermining the South Fork of Quitcupah 2R2S Block "A"

Small mammals represent a significant part of the ecosystem. The majority are herbivores and are the primary source of food for higher trophic levels, particularly raptorial birds, canids and felids. The potential exists for caving burrows in and/or changing burrow continuity due to fracturing of the strata. Should this occur, it is likely that young mammals in the nest would be crushed or cut off from parental care. Although this would temporarily alter the population density and age structure, recovery would be imminent and rapid. The 1997 Bat Survey for the SUFCO Mine conducted by J. Mark Perkins & Joshua R. Peterson is included in Appendix 3-8.

Information about small mammals specific to the Pines Tract Project area is provided in the VWP report (Appendix 3-9). General information about small mammals specific to the Muddy Tract area is provided in the Cirrus report (Appendix 3-11). General information about small mammals specific to the West Coal Lease Modifications are summarized in Appendix 3-13.

Threatened and Endangered Plant and Wildlife Species. Passage of the Endangered Species Act of 1973 (Public Law 23-20S) provided the legal basis for establishment of lists of endangered and threatened plant species. Such lists were prepared under direction of the Smithsonian Institution, and were published subsequently in the Federal Register (40: 2782 427924, 1975; and 41: 2452 4 24572, 1976). The region under investigation was included in a report on threatened and endangered species of the Central Coal lands of Utah (Welsh 1976). An inventory of endangered wildlife species performed in 1989 by the Division of Wildlife Resources recorded no species within the proposed permit area (conversation with Pamela Hill, DWR, Cedar City, 1991). Table 3-1 provides a list of Federally listed Threatened and Endangered Species that have been identified in the Utah counties in which Sufco lies. However, this list does not necessarily indicate these species are found within the mine permit boundaries.

A survey of the literature has failed to indicate the presence of any endangered or threatened plant species in the area. This lack of critical or unique species is supported by the field surveys of the lease areas. The region was searched by walking parallel transects on a quarter-section by quarter-section basis, with each community type within each quarter-section being traversed. No endangered or threatened species were encountered in the lease area or in the adjacent areas.

There are no federally listed threatened or endangered fish species inhabiting the aquatic habitat.

A discussion about threatened, endangered or otherwise sensitive plant and animal species of the Pines Tract Project area is given in Appendix 3-9. A discussion about threatened, endangered or otherwise sensitive plant and animal species of the Muddy Tract area is provided in the Cirrus report (Appendix 3-11). A discussion about threatened, endangered or otherwise sensitive plant and animal species of the West Coal Lease Modifications are summarized in Appendix 3-13.

A biological survey of plant and wildlife species prepared by Tetra Tech has been incorporated into Appendix 3-13 for the 20-acre modification of Federal Lease SL-062583. No species of concern were located during the survey. Refer to the Plate 3-3 (confidential) for raptor data, a raven's nest was located within the modification area. No surface disturbance is planned or subsidence anticipated within the 20-acre modification.

APPENDIX 3-13

Vegetation and Wildlife of the West Coal Lease Modifications

Vegetation and Wildlife of the 20-Acre Lease Modification



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Technical Memorandum

To: Sue Wiler **From:** David Steed
Company: USDI Bureau of Land Management – Price Field Office
CC: Mark Bunnell, Ark Land – Sufco Mine, Kreig Rasmussen, **Date:** October 5, 2012
Dave Tait, and Rob Hamilton, USDA Forest Service –
Fishlake National Forest
Re: Biological Survey: Plant and Wildlife Species Inventory for **Project:** 114-520127
the Proposed 20 Acre Lease Modification

As requested by Ark Land Company (Ark Land), and in coordination with the Bureau of Land Management, Price Field Office (BLM-PFO) and U.S. Forest Service – Fishlake National Forest (USFS-FLNF), Tetra Tech Inc. (Tetra Tech) conducted plant and wildlife species surveys on October 2, 2012 to support analysis for the proposed 20 acre lease modification associated with the Sufco Mine. The lease modification area is located on land administered by the USFS-FLNF, Richfield Ranger District within Sevier County, Utah (**Figure 1**).

Tetra Tech biologist Ms. Jill Reid consulted with Mr. Kreig Rasmussen and Mr. Dave Tait of the USFS-FLNF on October 1, 2012 for specific survey requirements to assist the BLM and USFS-FLNF analysis of the lease modification. Mr. Rasmussen had no species concerns since U.S. Fish and Wildlife Service (USFWS) and USFS-FLNF Sensitive animal species are not known to occur within the lease modification area or are very unlikely to occur. Mr. Tait wanted the following four plant species surveyed (as accessible) due to the potential for their occurrence: Bicknell milkvetch (*Astragalus consobrinus*), Ward penstemon (*Penstemon wardii*), last chance townsendia (*Townsendia aprica*), and Sevier townsendia (*Townsendia jonesii* var. *lutea*).

Based on consultation with the USFS-FLNF, review of special status species with potential to occur in the lease modification area, and Tetra Tech's knowledge of biological concerns in the area surrounding the Sufco Mine permit area, Tetra Tech biologists Ms. Reid and Ms. Naomi Kisen completed the following biological surveys on October 2, 2012:

- Vegetation survey for:
 1. Bicknell milkvetch
 2. Ward penstemon
 3. last chance townsendia
 4. Sevier townsendia
- Tetra Tech biologists Ms. Reid and Ms. Kisen also surveyed for the following three additional USFS-FLNF Sensitive plant species due to possible existence of habitat in the lease modification area which may have potential to support their presence:
 1. wonderland Alice-flower (*Alicciella cespitosa*)
 2. Nevada willowherb (*Epilobium nevadense*)
 3. Elsinore buckwheat (*Eriogonum ostlundii*)

- Visual encounter survey for:
 1. Raptor nest locations
 2. Other USFWS federally listed species for Sevier County
 3. Other USFS-FLNF Sensitive Species
 4. USFS-FLNF Management Indicator Species (MIS)
 5. Utah Division of Wildlife Resources (UDWR) Species of Concern (SPC) that have potential to occur in Sevier County
 6. Migratory bird species
 7. Incidental species

No aquatic species surveys were conducted due to the lack of suitable aquatic habitat and surface drainages in the lease modification area.

RESULTS:

The weather on October 2, 2012 was between 70 to 80 degrees Fahrenheit, with clear skies, and variable winds of zero to five miles per hour. Complete access within the lease modification area was limited due to the steep terrain, and in most areas, impassable topography.

Vegetation Survey Results - Elevation within the lease modification area ranges from 6,600 feet to 7,600 feet, extending from a valley floor to the top of a plateau over a section of steep hillside composed of Navajo sandstone cliff bands and terraces. The vegetation community at the top of the plateau is dominated by curleaf mountain mahogany (*Cercocarpus ledifolius*) and greenleaf manzanita (*Arcostaphylos patula*). Below the plateau, vegetation on the terraces between the cliff bands is dominated by Utah juniper (*Juniperus osteosperma*) and twoneedle pinyon (*Pinus edulis*), with slender wheatgrass (*Elymus trachycaulus*) and slender buckwheat (*Eriogonum microthecum*) in the understory. The herbaceous and deciduous species had entered autumnal senescence (see habitat photos attached). None of the seven plant species specifically surveyed were located during the survey.

Visual Encounter Survey Results - No USFWS threatened, endangered, candidate, or proposed species; USFS-FLNF Sensitive; USFS-FLNF MIS's (other than elk (*Cervus canadensis*) signs, see below); UDWR SPC species; or raptor nests were observed within the lease modification area. A black-billed magpie (*Pica hudsonia*) was observed flying along the canyon rim near the top of the lease modification area. Elk droppings were observed throughout the lease modification area.

If you have any questions regarding this memo, please contact me at 801-364-1064, extension 202, or Ms. Reid at 801-364-1064, extension 214.

Sincerely,



David Steed
Tetra Tech

Attachments: **Figure 1 and 20 Acre Lease Modification Habitat Photos**

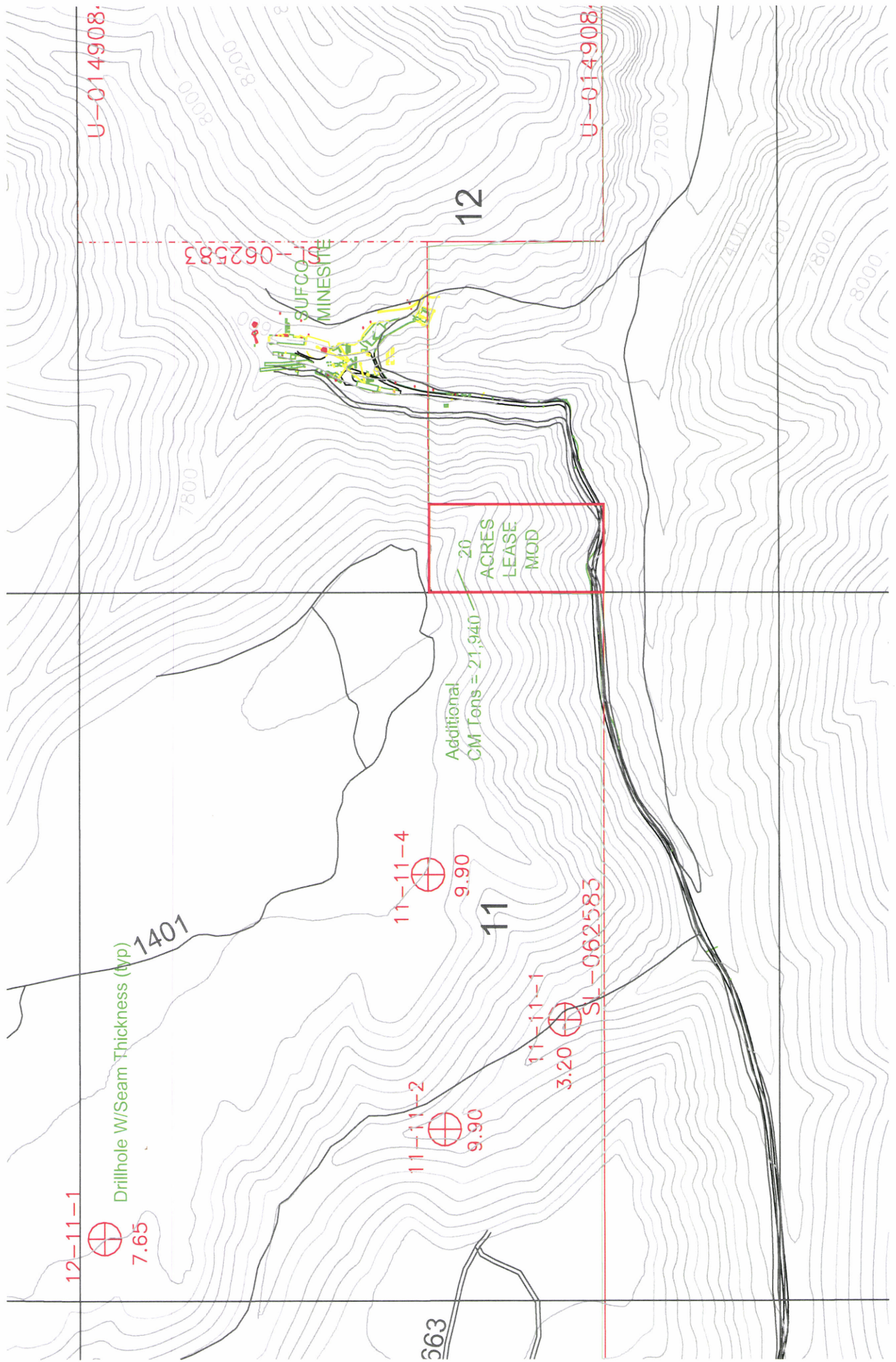


Figure 1: Project Location

20 Acre Lease Modification Habitat Photos



Photo 1: Habitat within northeast corner of 20 acre lease modification looking southeast.



Photo 2: Habitat along top of 20 acre lease modification.



Photo 3: Top of 20 acre lease modification looking south at habitat within 20 acres.

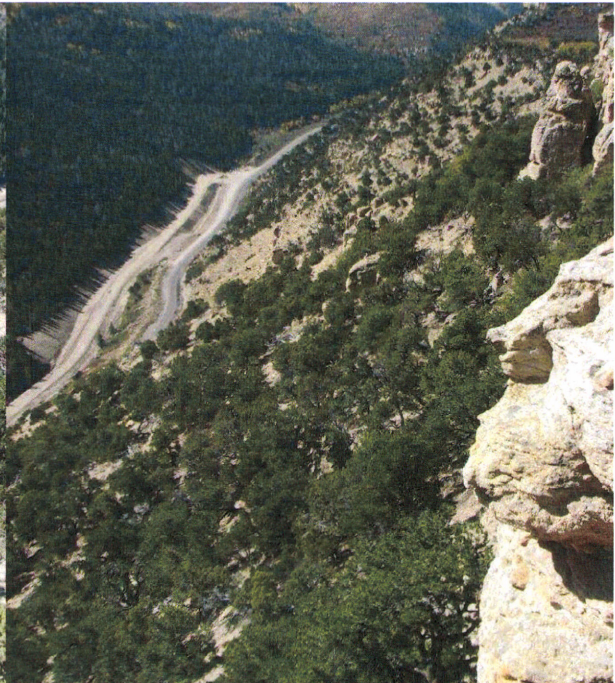


Photo 4: Top of 20 acre lease modification looking southwest at habitat within 20 acres.



Photo 5: Top of 20 acre lease modification looking southeast at habitat within 20 acres.



Photo 6: Habitat within 20 acre lease modification looking east.

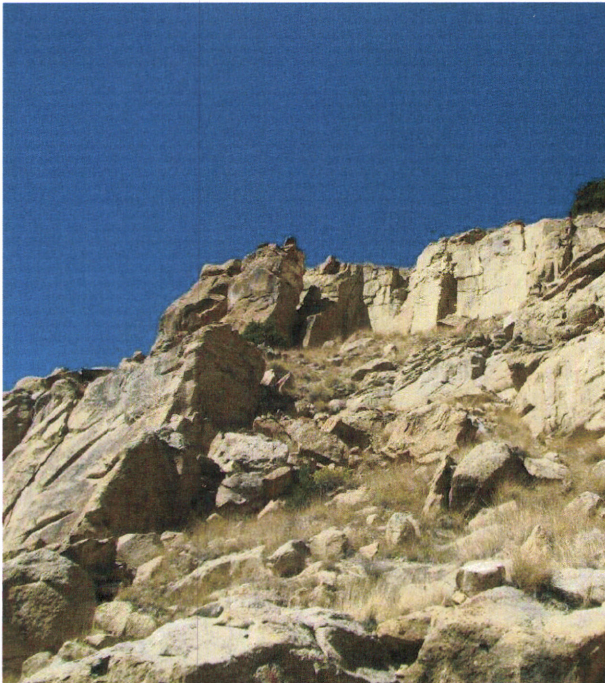


Photo 7: Habitat within 20 acre lease modification looking north.



Photo 8: Habitat within 20 acre lease modification looking south.



Photo 9: Habitat south of the road at the southwest corner of 20 acre lease modification looking south.



Photo 10: Habitat south of the road along south edge of 20 acre lease modification looking south.



Photo 11: Habitat south of the road along south edge of 20 acre lease modification looking south.



Photo 12: Habitat south of the road at the southeast corner of 20 acre lease modification looking south.



Photo 13: Habitat north of the road along west edge of the 20 acre lease modification looking north.



Photo 14: Habitat north of the road within 20 acre lease modification looking north.



Photo 15: Habitat north of the road within 20 acre lease modification looking north.

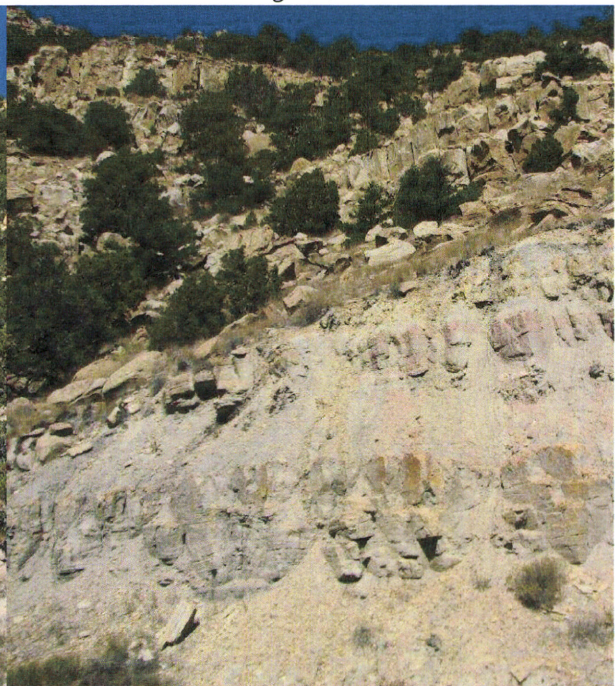


Photo 16: Habitat north of the road along east edge of the 20 acre lease modification looking north.

CHAPTER 4
LAND USE AND AIR QUALITY

of mining operations. The Applicant also agrees to have any such cultural resources evaluated in terms of National Register of Historic Places eligibility criteria.

West Coal Lease Modification Areas

Cultural and Historic Information. Cultural resource information and maps identifying cultural and historical study areas are located in Appendix 4-2 in the Confidential folder of the M&RP. EarthTouch, Inc. conducted an intensive evaluation of the West Coal Lease Modification Areas.

The results of the cultural resource inventory for the project resulted in the identification of 15 cultural resource sites, which included three previously recorded sites (42SV1301, 42SV1386 and 42SV2688), and 12 new sites (42SV3207-3215 and 42SV3246-3248). Overall, the identified cultural resource sites consist of small- to moderate-sized lithic scatters and small rock shelters/overhangs, some with associated pictographs. Of the 15 sites identified within the West Coal Lease Modification Areas, six sites are recommended eligible for the National Register of Historic Places. These sites include 42SV3209, 42SV3211, 42SV3212, 42SV3213, 42SV3247 and 42SV3248 which consist of small rock shelters and rock shelters with pictographs. Site 42SV3209 will be the only site undermined under the present mine plan. This shelter is more of a terrace overhang that extends 6 meters long, with a 1.5 meter overhang or width.

South Fork of Quitchupah 2R2S Block "A" Area

Cultural and Historic Information. Cultural resource information and maps identifying cultural and historical study areas are located in Appendix 4-2 in the Confidential folder of the M&RP. Canyon Environmental conducted an intensive evaluation of the South Fork of Quitchupah Area.

The results of the cultural resource inventory for the project resulted in the identification of 4 cultural resource sites, which included one previously recorded site (42SV2690), and 3 new sites (42SV3462, 42SV3463 and 42S3464). Overall, the identified cultural resource sites consist of lithic scatters and a small rock shelter/overhang. Of the 4 sites identified within the South Fork of Quitchupah Area, two sites are recommended eligible for the National Register of Historic Places. These sites include 42SV2690 which consists of a lithic scatter and 42SV3464 which consists of a lithic scatter associated with a small rock shelter. Both sites will be undermined under the present mine plan. This shelter is more of a terrace overhang that measures approximately 1.5 meters high and 4 meters wide at the opening and extends 1.5 meters beneath the rock to a

tapered edge. The shelter shows signs of modern disturbance and it appears that some of the fill material has been disturbed by minor looting activities.

The monitoring, treatment plan and mitigation of the cultural resource sites will be in accordance with the Memorandum of Agreement (MOA), and any amendment to it, between the U.S. Forest Service, Utah State Historic Preservation Office (SHPO), and Canyon Fuel Company, LLC located in Appendix 4-6.

20-Acre Modification Federal Lease SL-062583

Cultural and Historical Information. The cultural resource inventory of the area revealed no historic properties, therefore the USHPO determined there would be "no effect" associated with the inclusion of the area into the existing lease (Appendix 4-2).

The Applicant agrees, however, to notify the regulatory authority and the Utah State Historical Preservation Office (SHPO) of previously unidentified cultural resources discovered in the course of mining operations. The Applicant also agrees to have any such cultural resources evaluated in terms of National Register of Historic Places eligibility criteria.

4.1.1.2 Previous Mining Activity

Portions of the mine plan area were mined prior to the filing of this permit application. SUFCO Mine began a small operation mining the Upper Hiawatha Coal seam in 1941. There was no previous mining activity prior to the 1941 SUFCO operation.

From 1941 through 1974, the coal was removed by conventional mining techniques. From 1974 through 1978, both conventional and continuous mining methods were used. From 1978 until October 1985, all mining used continuous mining methods. Since October 1985 both continuous mining and longwall mining methods have been used. The portion of the seam mined by conventional methods was only partially extracted leaving all pillars for support. The majority of the mining done has been full extraction. All longwall mining is full extraction.

The quantity of coal mined prior to this permit application was approximately 37,058,100 tons. The earlier workings are shown on Plate 5-1 as an integral part of the mining operation.

CHAPTER 5
ENGINEERING

Though not anticipated, short segments of Cowboy Creek could be subsided in the SITLA Muddy Tract. If this is anticipated to occur, Sufco, will submit a plan for mitigation to address, if it occurs, adverse impacts to Cowboy Creek. With the approval of the Division and concurrence of the Forest, Sufco will instigate a flow monitoring plan similar to the plan implemented prior to the undermining of the East Fork of Box Canyon. If mitigation of surface cracks are required, methods similar to those proposed and implemented in the East Fork of Box Canyon as described above could be used.

Mining within the area of the East Fork of the Box Canyon, South Fork of Quitcupah and within the area of Cowboy Canyon in the SITLA Muddy Tract will be conducted in accordance with State and Federal rules and regulations and the requirements and stipulations presented in the BLM's Conditions of Approval of the Resource Recovery and Protection Plan (July 31, 2003) located in Appendix 1-2. A survey of the water quality and quantity of surface and groundwater, including State appropriated waters, within the SITLA Muddy Tract has been completed. The results of the area survey are included in the PHC for the SITLA Muddy Tract and included in Appendix 7-20. Ground and surface waters in the tract that have attached rights are listed in Appendix 7-1.

20-Acre Federal Lease Expansion

No subsidence is anticipated because the only mining activities within the lease expansion area will be the construction of entries, refer to Plate 5-7.

A discussion regarding the methods Sufco would employ to mitigate and replace an adversely affected State appropriated water supply is provided in Chapter 7, Section 7.3.1.8.

5.2.5.2 Subsidence Control

Adopted Control Measures. As indicated above, SUFCO Mine has adopted subsidence-control measures in areas where surface resources are to remain protected. These controls consist primarily of leaving support pillars in place in those areas designated on Plates 5-10A, 5-10B & 5-10C as not planned for subsidence. Based on experience and data collected from the lease area, the design of support pillars for those areas where subsidence is not planned has been based on the following equations:

$$SF = SD/OS \quad (5-1)$$

where SF = safety factor against pillar failure (fraction)